

tion into these latter could not be definitely proved, and on this account, and also because no other kind of terminal arrangement could be discovered, he thinks that this nervous net-work in the heart may have the signification of a terminal net-work.

A fuller report of these investigations is promised to appear in *Schulze's Archiv. f. mikr. Anatomie*.

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Dr. Aug. Ewald, *Pflueger's Archiv*. XII, 11 and 12, has also investigated the subject, making very careful histological examinations with various methods, the gold preparations, osmic acid, etc, and comes to the conclusion that the theory of Gerlach as to the continuity of the nerve and muscle substance, is untenable and that the terminal plate represents the actual termination of the nerve fibre in the striated muscle. He maintains also, the theory is unsupportable on physiological grounds, and he expresses surprise that Gerlach, who speculates in his paper on its physiological bearings, should have paid no attention to the proofs of this, by experimental investigations.

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DISTRIBUTION OF THE NERVES IN THE CUTICLE.—Dr. Ditlefsen contributes the result of his observations upon the skin of the frog, from which it appears that bundles of nerve fibres ascend directly to the very base of the horny layer, where they sub-divide, and are distributed to ramify singly among its cells, and to reach even the free outer-surface of the skin. *Centralbl. f. d. Med. Wissensch.* (*Boston Med. and Surg. Journal*).

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DURATION OF THE MUSCULAR CONTRACTILITY AND THE NERVOUS EXCITABILITY AFTER DEATH BY ANÆSTHETICS.—M. Petit communicated to the Soc. de Biologie, at its session of Feb. 12 (rep. in *Gaz. des Hopitaux*, No. 20), the results of some experiments he had undertaken on this subject, in the laboratory of Prof. Vulpian. From these, it appeared that the nervous excitability and muscular contractility persist longer after death caused by anæsthetics (sub-cutaneous or intra-venous injections of chloral, ether or chloroform), than after death by arrest of the heart or hemorrhage. There is a complete analogy between these facts which we observe after death by anæsthetics, and those observed after death from carbonic oxide.

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THE THERMIC INFLUENCE OF THE CEREBRAL HEMISPHERES.—Eulenberg and Landois in a preliminary communication, *Centralbl. f. d. med. Wissensch.* No. 15, report the results of experiments on the vaso-motor apparatus of the cerebral cortex. The temperature measurements were made with a thermo-electric apparatus for the most part; the brain was irritated, in some experiments, by cauterization with a heated copper wire, in others, by an induction current, the animals being for the most part curarized and artificial respiration maintained. The apparent results are given as follows:

1. Destruction of certain portions of the anterior brain of dogs in the parietal region caused immediately, a notable rise of temperature in both contra-lateral extremities. This increase of temperature took place directly after the destruction of the cortex, frequently before the awakening of the animal from the chloroform narcosis, or before any voluntary movements were perceived. The rise, in some cases, was as much as  $5^{\circ}$  to  $7^{\circ}$  Cent. ( $= 9^{\circ}$  —  $12.6^{\circ}$  F.), in others, it amounted to only  $1\frac{1}{2}^{\circ}$  to  $2^{\circ}$  Cent., and it was sometimes more pronounced in the anterior, sometimes in the posterior extremity, and this was evidently dependent on the position and extent of the lesion, and also, on the proportionately greater or lesser degree of intensity of the lesion, with a correspondingly limited area of the latter, and an accompanying irritation of adjoining portions of the cortex; a slight and transient cooling of the hinder limb, may be produced with the rise of temperature in the anterior one, and *vice versa*.

2. The special cortical tract in question, is bounded anteriorly, very nearly by the sulcus cruciatus; it comprises, particularly the posterior and lateral part of a convolution, which seems to correspond to the anterior central convolution in man, and the ape, (fourth convolution, the gyrus postfrontalis of Owen). The heat influencing regions for the anterior and posterior members are separate from each other; that for the fore-limb lies more anteriorly and outwardly, than the other, and close to the lateral end of the sulcus cruciatus. Injury of the supra sylvian gyrus, or another region of the cortex, still back and outwards, is, when sufficiently isolated, without thermic effect.

3. In cases in which the experiments were successful, disorders of motility and of the muscular sense were noticed in the contra-lateral extremities, according as the motor centres, pointed out by Hitzig and Fritsch, are more or less implicated. Usually, after the operation, the progression is somewhat embarrassed, through uncertain or improper management of the affected limbs, sometimes also a tendency to fall toward the uninjured side, by reason of slipping of the feet, etc., an indication that the cortical thermic centres must be in the neighborhood of the corresponding motor points of the cerebral cortex.

4. This increase of temperature is, in almost all cases, perceptible for a considerable time after the injury, though gradually disappearing. In some cases, it is almost as marked the third week, as immediately after the operation. Generally, however, it gradually disappears the second or third day, so that indeed, a slight, transient difference in the opposite sense, may be detected. The accompanying disturbances of motility and of the muscular sense, are usually, still observable though to a less degree, for some days following the operation.

5. Localized electrical irritation of these cortical points, if undertaken with sufficiently weak currents, causes a slight and transitory diminution of temperature in the contra-lateral extremities, which can be detected by the thermo-electric apparatus. This occurs alike in curarized and uncurarized animals. If the irritation is made with stronger currents, or kept up for a longer period, a constant decrease of temperature is not pro-

duced, but instead, we have either irregular oscillations, or a slight rise which, according to circumstances, outlasts the irritation itself, for a longer or shorter time. Irritation of other superficial cerebral regions, either before, behind, or external to the ones described, has no effect on the temperature.

6. Irritation or injury of the lumbar cord, and likewise, of the peripheral nerve trunks (sciatic) has, when it is performed along with the injury to these cortical regions, and the comparison of temperatures, still the usual thermic alterations in the posterior members as a consequence.

The authors reserve a full discussion of the signification of these experimental results for the present. Still, they feel justified in inferring the existence of cortical, vaso-motor centres, which serve in part, as central terminations to the fibres in the cerebral peduncles, and which perhaps, serve as a route of transmission of psychic influences over the vaso-motor routes, and on the other hand, serve to produce the consciousness of local alterations of the temperature, and the circulation through the mediation of the associated cortical system.

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Dr. E. Hitzig, *Centralbl. f. d. med. Wissensch.* No. 18, recalls the fact, that he had observed, and reported in (*Reichert u. DuBois Reymond's Archiv.* 1874. Hft. 4), a unilateral warming of the body after injury of the brain, to such a degree that it was perceptible without instrumental aid. He, therefore, confirms the two most important points in the communication of Eulenberg and Landois, (1.) that superficial injury to the cerebrum, causes notable alterations of temperature in the limbs of the side opposite to the lesion; and (2) that in this relation, the same law of localization prevails, as in the case of motor phenomena starting from the cerebral cortex.

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THE THERMIC ACTION OF PERIPHERAL IRRITATION AND DIVISION OF THE NERVE TRUNKS. In *Virchow's Archiv.*, LXVI., 14.—April, 1876 Drs. Eulenberg and Landois report experiments on the subject of the thermic effects of peripheral irritation and section of the nerve trunks. After a detailed statement of their methods and apparatus, the principal point in which was the use of the Meissner-Meyerstein galvanometer with thermo-electric appliances, they give their experiments in detail. The subjects were rabbits and dogs, and the nerves experimented upon were the cervical sympathetic and the sciatic. They found that irritation of the cervical sympathetic in its continuity caused a direct decrease of temperature of the ear of the corresponding side, which lasted some fifteen or twenty seconds after the cessation of the irritation, and gave place to a rise of temperature above the normal.

Section of the sympathetic caused after a very slight and transient fall, (0.1° to 0.2° C., 10 seconds in duration,) a steady and rapid rise of temperature of the corresponding ear. Irritation of its peripheral end gave very much the same results as irritation of its continuity.